COVER SHEET

The Development and Psychometric Investigation of the University Student Depression Inventory

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Abstract

Background: Depression is prevalent among university students. It is debilitating and affects the academic performance of students. One of the most common reasons why students consult counselling centres is depression. Therefore it is important to assess the university students' depression by valid measures designed particularly for this purpose.

Method: The present study developed the "University Student Depression Inventory" (USDI) to measure the depressive symptoms of university students.

Result: Items based on a broad range of depression symptoms were subjected to factor analysis, resulting in a 30 item scale with three subscales: Lethargy; Cognitive / Emotional; and Academic Motivation. Psychometric investigation revealed satisfactory reliability and convergent and divergent validity.

Conclusion: It is expected that multidimensional USDI would be a useful tool for university counselling services to assess the depression of the students.

Key words: Depression, university students, assessment, a multidimensional scale.

The Development and Psychometric Investigation of the University Student Depression Inventory

Depression is a common emotional disorder, which causes distress and impairs functioning. The cognitive, physiological, behavioural and motivational symptoms are the core features of this disorder (Beck, 1967) and different combinations of these symptoms are experienced by depressed individuals (Hair et al., 1998). The severity of these symptoms of depression can range from mild to severe (Angst and Merikangas, 1997). While depression is a community wide problem which affects many people of all ages, gender and cultures (APA, 2000), university students (the term refers to university and college students) also commonly experience depression. Estimates of depression in the university population ranges from 30% of students experiencing some level of depression to around 15% of students experiencing clinical levels of depression at any one time (McLennan, 1992; Rosenthal and Schreiner, 2000).

Depression is a serious problem for university students Depressed students are shown to have problems with university academic work and motivation, and report receiving lower grades than non-depressed students (Lyubomirsky et al., 2003; Vredenburg et al., 1988). Depression also causes more global problems for students, such as decreased quality of life and increased risk of suicide (Beck and Young, 1978; Simpson et al., 1996). Keeping in view the problematic nature of students' depression it is essential that university counselling centres can adequately assess depression in the student population.

Depression among University Students

While depression has been widely studied in clinical population, there has been limited research that specifically investigates this mood disorder in university students. The university environment presents many challenging and demanding situations, such as adjusting to a new environment, mastering new skills (Martin et al., 1999) and frequent academic stress (Misra

and Castillo, 2004) that may elicit depression in students. Vredenburg et al. (1988) performed one of the few studies on student depression and found that even though the severity of students' symptoms was mild, their depression was chronic and caused ongoing impairment, including increased suicide risk (Beck and Young, 1978). Students' problematic symptoms included cognitive symptoms such as perfectionist ideation, worthlessness and low self-esteem, motivational symptoms such as dependency and loss of initiative, and social problems surrounding making friends and assertiveness (Vredenburg et al., 1988). These symptoms, which were also a common manifestation of subclinical depression (Beck, 1967; Rapaport et al., 2002) debilitated university students (Vredenburg et al., 1988).

Depression among university students, in spite of its alarming nature, has not been investigated extensively. A review of the literature indicates that students have been used as a convenience sample in analogue studies to examine clinical depression. Further, university students have been used in factor analysis studies to explore the factor structures of various clinical depression scales. Results from these studies indicate that although student depression is qualitatively similar to clinical depression, there may be slight differences in the manifestation and the severity of the symptoms. Subtle quantitative differences are primarily related to symptom severity (Cox et al. 1999; Cox et al, 2001). Researchers have also indicated that there are minor differences in the specific symptoms experienced by students. For example, students' depression is more cognitive than clinical depression (Cox et al., 1999; Whisman et al., 2000). Students, when depressed experienced lack of concentration, pessimism, self-blame, self-dislike and lack of energy (Cox et al., 1999). These studies also indicate that some major somatic symptoms of clinical depression, such as changes in sleep and appetite, are not useful as indicators of depression in students as they are caused by other factors such as social and academic schedules (Kitamura et al., 2004; Smith et al., 2001; Steer

and Clark, 1997). Overall, students' depression is similar to clinical and sub-clinical depression, with some special features.

The major limitation of analogue and factor structure studies using student samples is that they are not designed to measure symptoms and severity of student depression in itself; rather they are designed to observe clinical symptoms in students with high ratings on clinical depression scales. As a consequence, these studies may only be investigating students with higher severity of clinical symptoms, rather than students who experience problematic depression.

Assessment of Student Depression

Student depression is one of the most common reasons why students visit university counselling centres (Benton et al., 2003; Surtees et al., 1998). Up to 40% of students visiting university counselling centres have problems with depression, and the demand for depression services is increasing (Benton et al., 2003; Surtees et al., 1998). Moreover, many students seeking university counselling services for other issues are also experiencing depression (Surtees et al., 1998). In order to manage the high demands for services, university counselling centres must be able to identify and deal with depression when necessary.

While counsellors are able to detect depressive symptoms in students through clinical interview, it may be difficult if depressed mood is not the primary reason for the consultation or if counselling time is limited. Smith et al. (2001) suggest using a screening tool for depression, in particular to detect those students who come to university counselling services with depression as a hidden problem. They suggest that a screening tool is more useful than clinical interview, particularly if mood is not the primary symptom. The use of a scale also enables counsellors to quickly identify and address specific problems that the student is experiencing. Further, it can also be used to evaluate the effectiveness of an intervention.

Some university counselling centres have developed their own scales to measure depression in students (e.g. Benton et al., 2003). However, the drawback of using a clinic-developed scale is that they are not psychometrically assessed, and therefore the accuracy and clinical utility of the scale has not been objectively tested. The College Adjustment Scales (Anton and Reed, 1991) is a scale specifically designed to assess numerous problems that university students commonly experience, including depression and suicide. However, subsequent research on the scale has questioned its psychometric properties and its ability to distinguish between problem subcategories (Campbell and Pritchard, 2000). Alternatively, scales such as Depression scale of the Depression Anxiety Stress Scale (DASS) was partially developed on students to assess whether a person's distress was primarily caused by depression, anxiety or stress (Lovibond and Lovibond, 1995). Although it measures depression in general, it may not capture the specific cognitive, motivational and social symptoms experienced by depressed students.

Clinical depression scales such as the Beck Depression Inventory-II and Zung scale have excellent psychometric properties, however they are designed for use with clinical populations (Beck et al., 1996; Zung and Durham, 1965)**.** As pointed out earlier, these scales are not necessarily indicative of level of depression in a student sample, and therefore may not identify students who are experiencing problematic depression. Secondly, these scales also include items related to appetite and sleep patterns. Fluctuations in these particular prominent symptoms of depression have been found in university students, regardless of level of depression (Smith et al., 2001; Steer and Clark, 1997). Further, a recent study examining the factor structure of Zung scale, using a large university student sample, has pointed out that "sleep disturbance" is not an indicator of students' depression (Kitamura et al., 2004). Additionally, clinical scales only measure major clinical symptoms, specifically emotional, cognitive and physiological depression symptoms. However, depressed students have been

shown to have many problems with motivation, another aspect of depression (Beck, 1967; Vredenburg et al., 1988). Motivation is a major aspect of university life and identifying the nature of depressed students' motivational problems is important in assessment, because these symptoms would directly impact their success at university. Furthermore, if university services employed clinical scales they would not pick up students with subclinical levels of depression.

Thus, university students frequently experience depression, which may range from mild to moderate in degree. Further, their manifestation may be characterised by specific cognitive, motivational and social symptoms relevant to the educational environment. In order to identify and manage such students, university counselling services need a psychometrically sound scale which adequately reflects students' depression. The aim of the current study was to develop the University Student Depression Inventory (USDI), a scale which adequately measures student depression and reflects the manifestation of student depression as cited in the literature. The second aim of the study was to assess the psychometric properties of the scale.

Method

Participants

The sample consisted of 322 students who were studying at the Queensland University Technology in Brisbane, Australia. Participants included 247 (76.7%) women and 74 (23.0%) men, whose mean age was 24.44 years (*SD*=7.79 years; 1 participant did not indicate gender; 4 participants did not indicate age). Participants were studying in the schools of psychology (63.0%); humanities and human services (20.2%); health (5.9%); business (3.7%) and others (6.8%). Students were predominantly from first (42.4%); second (13.4%) and third (34.5%) year levels, with some students from fourth year (4.3%); master level (3.7%) and PhD level (.9%). Most students were full time (81.4%) as opposed to part time (18.0%). Most

participants spoke English as their first language (81.4%) as opposed to another language (5.9%).

Measures

The battery consisted of an information package, consent form, demographic information form, the University Student Depression Inventory, the Depression Anxiety Stress Scale, the Life Satisfaction Scale and a debriefing form.

Depression Anxiety Stress Scale (DASS). The DASS is a 42 item self report questionnaire used to assess the emotional states of depression, anxiety and stress developed by Lovibond and Lovibond (1995). Test takers are asked to rate each item on a 4-point frequency scale from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*) according to how much they were affected by the item over the past week. The internal consistency for the DASS has been shown to be good for the Depression subscale (α=.91), the Anxiety subscale (α=.84), and for the Stress subscale (α=.90) in a non-clinical population (Lovibond and Lovibond, 1995).

Life Satisfaction Scale - Subscale One: Subjective State (LSS-S). The LSS-S is a ten item self-report questionnaire used to assess subjective life satisfaction developed by Kopina (1996). The participant is asked to answer negatively and positively worded items on a four point intensity scale from 1 (*definitely no*) to 4 (*definitely yes*) in response to the question "How have you been feeling lately?" Negative scores indicate low subjective life satisfaction and positive scores indicate high subjective life satisfaction. As the psychometric maturity has been described as under construction, the present study will calculate a measure of internal consistency to ensure reliability of the scale (Kopina, 1996).

Procedure

Item generation. Items for the University Student Depression Inventory (USDI) were generated by third year psychology students as a part of a class exercise. To ensure that the

items generated were a reflective of this population, firstly, these students worked in small groups to discuss various aspects of university student's depression and secondly, wrote items that reflected the dimensions of this population's depression. All together 125 items, falling into cognitive, behavioural, motivational, affective and physiological categories were generated. Three psychologists, who worked in clinical settings, reviewed the item pool to reduce redundancy. Six counsellors, who worked at QUT student counselling centres, were requested to short list the relevant items. The authors revised the items in light of their feedback. The resulting inventory was a 46-item negatively worded self report inventory answered on a 5-point frequency scale from 1 (*not at all*) to 5 (*all the time*) in response to the statement "Please circle the number that indicates how often you have experienced each item over the past two weeks".

Data collection. After the USDI was developed, ethical approval was sought and obtained for the project. General students enrolled in the university were invited to participate. No exclusion criteria were used. Initially, the study was advertised on the first year psychology notice board. These students were invited to participate in the scheduled data collection sessions. First year psychology students completed the entire battery and received credit for their participation. They were invited to complete the USDI a second time in a session one week later until a quota was filled.

In order to increase the sample size other psychology students (second, third, fourth year, masters and Phd) were also informed about the study through announcements prior to the lectures. They were invited to complete the questionnaire battery in class or to take away with them, returning it to the researchers later directly or via a secure box at psychology reception. Only those who showed interest in the study were given the questionnaires. The questionnaire battery was randomly arranged to overcome order effect.

Some classes approached later in the data collection were only asked to fill in USDI.

Students were also approached individually within the university who either filled the questionnaire immediately or took it away with them and returned it later by methods mentioned previously. Although, no checks were made on the exact response rate, most of those who volunteered to participate returned the completed questionnaires.

All participants were informed of the nature of the study verbally and in writing. Students signed a consent form to show voluntary consent and that they understood the information about the study. After the students finished, they were debriefed verbally and in writing.

Results

Preliminary Analysis

Data cleaning and screening. Less than 5% of the sample had missing data, and subjects with missing data on the USDI were deleted so as to avoid overfitting the data in factor analysis (Tabachnick and Fidell, 2001). Subjects with missing data on other scales were excluded from those analyses. Some items had skew and univariate and multivariate outliers, these items were transformed however the original data was used as transformation did not change the output.

Internal consistency of DASS and LSS-S. Coefficient alphas for the DASS total, Depression, Anxiety and Stress sub scales were .97, .94, .92, and .93, respectively (*N*=164, 168, 168 & 166). The alpha for the ten items of the LSS-S was also acceptable, .87 (*N*=168). It was calculated after reversal of the five negatively worded items.

Factor Analysis

The original 46 items on the USDI were subjected to exploratory factor analysis using the SPSS 11.5 statistical package (SPSS Inc., 2002). As there is little research on the underlying factors of student depression, exploratory factor analysis was used to determine the number and nature of those factors (Tabachnick and Fidell, 2001). Responses of 308 participants were used in the factor analysis, after excluding cases with missing data on the USDI.

Test results indicated that the original 46 item USDI was factorable. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .94 indicating a "marvellous" level of intercorrelations among the items (Kaiser, 1974). Similarly, Bartlett's test of sphericity showed that there was significantly sufficient correlations between the items to perform factor analysis, approximate $\chi^2(1035)=7692.461$, $p<.001$.

Underlying factors were identified on the basis of the eigenvalues and scree test. Nine factors had eigenvalues over one, and they explained 60% of the variance (Hair et al., 1998). However, the scree test showed that four factors had a larger proportion of variance apportioned to them than the remaining factors (Cattell, 1966). Four factors were extracted as this number was more consistent with previous theories about depressive symptoms and the resulting solution was also the most interpretable.

The initial factor analysis was run with both principle components and common factor extraction methods, and oblique and orthogonal rotations. The solution was similar throughout all methods, indicting that the factors were stable (Gorsuch, 1983). Principle Axis Factoring, a method of common factor analysis, was chosen to extract the solution because it relied only on common variance, and as a result decreased the likelihood of error and therefore increased replicability and less bias than principle component models (Snook and Gorsuch, 1989). A Direct Oblimin (oblique) rotation was used as three of the four initial factors were highly correlated.

Once the extraction and rotation methods were confirmed, the items were gradually reduced. The fourth factor was not correlated with the others, and therefore was not considered to be related to the underlying construct of student depression (factor correlations ranged from .03-.12), so it was dropped and the analysis was re-run with only three factors.

Items were further refined by a gradual process involving deleting items with low communalities and low loadings. Items with extraction communalities less than or equal to .3

were dropped to ensure that variance in remaining scale items were related to the other items and therefore related to the construct of student depression (Tabachnick and Fidell, 2001). Items were also deleted if they had unique factor loadings less than .4 on all factors, after the structure matrix was also consulted to ensure that total loadings were also low (Hair et al., 1998). Items with low loadings were deleted to ensure that scale items significantly shared a moderate amount of unique variance with one of the aspects of student depression (Hair et al., 1998).

Factor Analysis Results for the Final Scale

The factor analysis resulted in a 30 item scale which loaded on three factors as shown in Table 1. Factor 1, Lethargy, comprised of nine items which included items regarding lethargy, concentration difficulties, and task performance. Factor 2, Cognitive / Emotional, comprised of 14 items which included items regarding emotional and cognitive aspects of depression, specifically suicidal ideation, worthlessness, and emotional emptiness and sadness. Factor 3, Academic Motivation, comprised of seven items which included items regarding motivation and study tasks, specifically lecture attendance and motivation to study. The total variance explained by these factors was calculated from the sums of squared loadings from the structure matrix. The total variance explained by the Lethargy, Cognitive / Emotional and Academic Motivation factors was 28.27, 29.99, and 20.60, respectively. As oblique rotation was used and factors were moderately correlated, these were overestimates of the total variance explained and therefore must be interpreted with caution (Tabachnick and Fidell, 2001).

The three factors were highly intercorrelated, and the items which comprised each factor were positively related to the items which comprised the other factors. Items on the Cognitive Emotional factor were correlated to the Lethargy factor (.50) and the Academic Motivation factor (.41). Items on the Lethargy factor were correlated with the Academic Motivation

factor (.43).

The full scale produces a score between 30 and 150, the mean score for the sample studied was 71.12 (*SD*=19.26; *N*=308). Results for the three subscales were calculated by adding the items from each scale. The Lethargy subscale produces a score between nine and forty-five, the mean score for the sample studied was 22.67 (*SD*=6.13; *N*=308). The Cognitive / Emotional subscale produces a score between 14 and 70, the mean score for the sample studied was 32.03 (*SD*=10.55; *N*=308). The Academic Motivation subscale produces a score between seven and thirty-five, the mean score for the sample studied was 16.42 (*SD*=5.21; *N*=308).

Please insert Table 1 here

Reliability

Internal consistency. Coefficient alpha was calculated for the total USDI scale and each of the subscales to determine internal consistency of the scale. The internal consistency for the total 30 item USDI was .95. The internal consistency of the subscales was .89 for Lethargy, .92 for the Cognitive / Emotional subscale, and .84 for the Academic Motivation subscale.

Temporal Stability. The test-retest reliability of the scale was determined by calculating correlation coefficients between 27 participants' scores on the scale taken one week apart (Rust and Golombok, 1999). Total USDI scores were significantly correlated between time one and time two, r=.86, p<.001. The Lethargy, Cognitive / Emotional and Academic Motivation subscales were also significantly correlated between time one and time two, r=.76, .91, and .80, respectively, p<.001.

Validity

Convergent validity of the scale was investigated by calculating the correlation coefficients between the USDI and subscales and different subscales of the DASS. These correlations were based on scores of 177 participants who completed the DASS, excluding participants with missing data on each DASS subscale. The total USDI was more highly correlated with the DASS Depression Scale (r=.76, p<.001, N=168) than the other DASS subscales, DASS Anxiety (r=.56, p<.001, N=168), and DASS Stress (r=.62, p<.001, N=166). The Cognitive / Emotional, Lethargy, and Academic Motivation subscales were moderately to highly correlated to the DASS Depression scale (r= .81, .57, and .48, respectively; p<.001, N=168). The Cognitive / Emotional, Lethargy, and Academic Motivation subscales were also correlated to the DASS Anxiety scale (r= .60, .49, and .28, respectively; p<.001, N=168) and Stress scale (r= .60, .60, and .35, respectively; p<.001, N=166).

Divergent validity was determined by using an independent samples t-test to test whether the USDI could differentiate between high and low scores on the LSS-S. Of the 170 participants who completed the scale, two were excluded due to missing data. Participants who scored one standard deviation above and below the mean on the USDI were grouped as lowly depressed (N=25) and highly depressed (N=33), respectively. Highly depressed students (M=29.17, SD=4.22) had significantly lower life satisfaction on the LSS-S than lowly depressed students (M=40.00, SD=3.97), t(56)=9.93, p<.001.

Discussion

The University Student Depression Inventory (USDI) was developed to measure depression among university students. To develop this scale, items were generated based on students' and university counsellors' experiences of student depression. Factor analysis resulted in a 30 item psychometrically sound inventory of student depression with three interrelated subscales: Cognitive / Emotional, Lethargy and Academic Motivation.

The Dimensions of Student Depression

The Lethargy factor of the USDI is characterised by a combination of physiological, behavioural and cognitive manifestations. This factor is consistent with previous research on the factor structure of depression in students (Steer and Clark, 1997; Whisman et al., 2000). Some items reflect low energy and physical tiredness. On the other hand, items also reflect mental exhaustion and inability to focus on tasks. These items have been previously reported as problems for depressed students (Cox et al., 1999; Hill and Kemp-Wheeler, 1986). More severe physiological symptoms such as changes in sleeping and eating habits were not included in the scale as they did not load onto any items. This is consistent with previous research indicating that sleep and appetite changes in college students were caused by experiences other than depression (Smith et al., 2001; Steer and Clark, 1997).

The Cognitive / Emotional factor of the USDI is characterised by cognitive symptoms, emotional symptoms and social withdrawal. This factor is consistent with previous research on the factor structure of depression in students, and confirms that cognitive symptoms are important in student depression (Steer and Clark, 1997; Whisman et al., 2000). Cognitive items on this scale include suicidal ideation, low self-evaluation and pessimism, all items that have been shown to commonly affect depressed students (Beck and Young, 1978; Hill et al., 1987; Vredenburg et al., 1988). Emotional items on this scale include items such as sadness, emotional emptiness and anhedonia. Sadness and emotional emptiness are commonly found in student depression (Steer and Clark, 1997).

The third factor of the USDI, Academic Motivation, is characterised by motivation and procrastination items related to study. Students frequently experience motivation problems (Vredenburg et al., 1988). Moreover, procrastination is a common motivational symptom in mild depression (Beck, 1967). This factor is unique to the USDI, and therefore includes items that affect depressed students but are not usually included in other depression scales.

The items of the USDI reflected symptoms commonly seen in students who suffer from depression, and factor structure of the first two factors was consistent with previous research (Kitamura et al., 2004; Steer and Clark, 1997; Whisman et al., 2000). The USDI also includes special features relevant to students, such as the exclusion of a few severe depression items not related to student depression and a new sub-scale, Academic Motivation, which contains items commonly experienced by depressed students that are rarely included in depression scales.

Psychometric Properties

Psychometric analyses were performed on the USDI and its subscales to ensure the reliability and validity of the scales. To ensure that all sources of error for a self-report measure were estimated, both internal consistency and temporal stability were calculated (Henson, 2001). The two reliability measures were good for the full scale and all subscales. High test-retest correlations over one week reflected the stability of student depression, and demonstrated low error in the scale's measurement (DeVellis, 1991; McLennan, 1992). High coefficient alphas demonstrated interrelatedness between the items and again, low error in the scale's measurement (Schmitt, 1996). Overall, these high indices of reliability indicate that the scale is measuring the construct of student depression with little error (DeVellis, 1991).

Validity of the USDI scores was determined by convergent and divergent validity. Convergent validity was indicated by the association of the new scale with similar constructs. The USDI scores had a strong positive relationship with the DASS Depression subscale, indicating that the USDI and subscales represent a construct similar to core depression items as measured by the DASS Depression subscale (DeVellis, 1991; Lovibond and Lovibond, 1995). Although depression scales usually correlate highly, the relationship between the USDI and DASS Depression may infer redundancy of the scale as a measure of student depression.

The USDI has a moderate relationship with the DASS Anxiety and Stress subscales, which would be expected as depression is well known to be related to anxiety, and the DASS Stress subscale was designed to include items shared by anxiety and depression (Lovibond and Lovibond, 1995). However, the relationship is weaker than with the DASS Depression subscale, indicating that the USDI is more related to the construct of depression than anxiety or stress.

As would be expected, the Cognitive / Emotional subscale has a stronger relationship with the DASS Depression subscale, as items on this factor are similar to the items on the depression scale. This scale seems to represent a general depression, more closely related to other depression scales. However, Lethargy and Academic Motivation subscales have moderate relationship with DASS Depression subscale. This finding indicates that these subscales reflect some unique features of depression among students not captured by general scales. Further, these subscales are still more related to the depression subscale than to the anxiety or stress subscale, indicating that it is related to student depression.

Divergent validity of the scale was investigated by comparing the LSS-S scores between students who scored highly and lowly on the USDI. Consistent with previous research, students who were depressed had lower life satisfaction than students who were not depressed (Simpson et al., 1996). The USDI was able to differentiate between students' level of life satisfaction. Thus the convergent and divergent validity indirectly support the construct the validity of the scale.

Limitations and Further Research

It must be acknowledged that this scale is still in the preliminary stages, and although results so far look promising, further study is warranted. Replication of the study on another population, preferably from other universities, would evaluate the factor structure and psychometric quality of the scale (Kline, 1986). The sample used in this study was limited

because there was an overrepresentation of female students, students from psychology and undergraduate students. Replication on a more evenly sampled population would ensure generalisability to the entire student population.

Further research on the validity of the scale would also be useful especially as the depression among students is largely unstudied. Although validity of the measure was good, further validation against another format of depression assessment, such as clinical interview, would ensure that validity results were not an artefact of similar scale presentation of the validation scales (DeVellis, 1991). Clinical utility of the scale in a university counselling centre also needs to be assessed.

Possible redundancy found in the process of validation of the scale with the DASS Depression subscale should also be investigated in future research. The results indicated a high correlation between the DASS Depression subscale and the USDI. It may be due to similarity of items on the Cognitive / Emotional subscale of the USDI and DASS Depression, or that the DASS was partially based on university students (Lovibond and Lovibond, 1995). Further investigation of the relationship between the USDI and DASS Depression subscale would confirm the correlations and indicate whether the redundancy is serious.

Conclusion

This study demonstrated that the USDI is a valid and reliable measure of depression among students. Considering the lack of scales to specifically assess student depression, this scale is a useful addition for counselling services. This scale is unique as, compared to other clinical depression scales, it measures a wider range of depressive symptoms found in university students. The USDI may also be useful in further investigations on the nature of student depression and the manner in which it is similar or different from clinical depression.

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Table 1.

Factor Analysis for the Final 30 item USDI

	Factor			Communalities	
	1	2	3	Initial	Extracted
Factor 1: Lethargy					
1. I am more tired than I used to be	.*74*	.07	.11	.48	.44
4. I do not have the energy to study at my usual level	.*72*	.05	.12	.64	.65
9. My energy is low	.*67*	.07	.00	.54	.50
13. I find it hard to concentrate	.*61*	.04	.32	.69	.67
16. I don't feel rested even after sleeping	.*56*	.15	.03	.52	.43
18. Challenges I encounter in my studies overwhelm me	.*49*	.12	.13	.49	.41
21. My mood affects my ability to carry out assigned tasks	.*46*	.25	.06	.48	.42
24. Daily tasks take me longer than they used to	.*44*	.31	.03	.51	.44
28. My study is disrupted by distracting thoughts	.*44*	.16	.24	.54	.47
Factor 2: Cognitive / Emotional					
2. I wonder whether life is worth living	-.15	.*85*	.01	.67	.61
5. I feel worthless	-.02	.*76*	.08	.67	.62
7. I have thought about killing myself	-.10	.*74*	.08	.60	.46
10. No one cares about me	-.14	.*70*	.01	.42	.41
11. I feel emotionally empty	.29	.*58*	.12	.59	.51
14. I feel sad	.32	.*57*	.10	.54	.53
15. I worry I will not amount to anything	.07	.*57*	.16	.52	.48
17. The activities I used to enjoy no longer interest me	.13	.*55*	.09	.51	.45
19. I feel like I cannot control my emotions	.24	.*51*	.07	.54	.49

20. I spend more time alone than I used to	.13	*.51*	.02	.44	.36
22. I feel disappointed in myself	.18	*.49*	.26	.64	.57
25. I feel withdrawn when I'm around others	.20	*.49*	.12	.50	.46
26. I do not cope well	.34	*.46*	.16	.67	.62
29. I think most people are better than me	.26	*.44*	.09	.54	.44
Factor 3: Academic Motivation					
3. I do not have any desire to go to lectures	.02	.00	*.68*	.50	.45
6. I don't attend lectures as much as I used to	.08	.04	*.67*	.44	.39
8. I don't feel motivated to study	.40	.04	*.58*	.65	.66
12. Going to university is pointless	.14	.20	*.52*	.41	.33
23. I have trouble starting assignments	.30	.02	*.50*	.49	.45
27. I do not find study as interesting as I used to	.33	.02	*.49*	.56	.50
30. I have trouble completing study tasks	.39	.08	*.44*	.61	.57

Note: *N*= 308. Factor loadings are in italics. Factor loadings are unique loadings (pattern matrix).

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